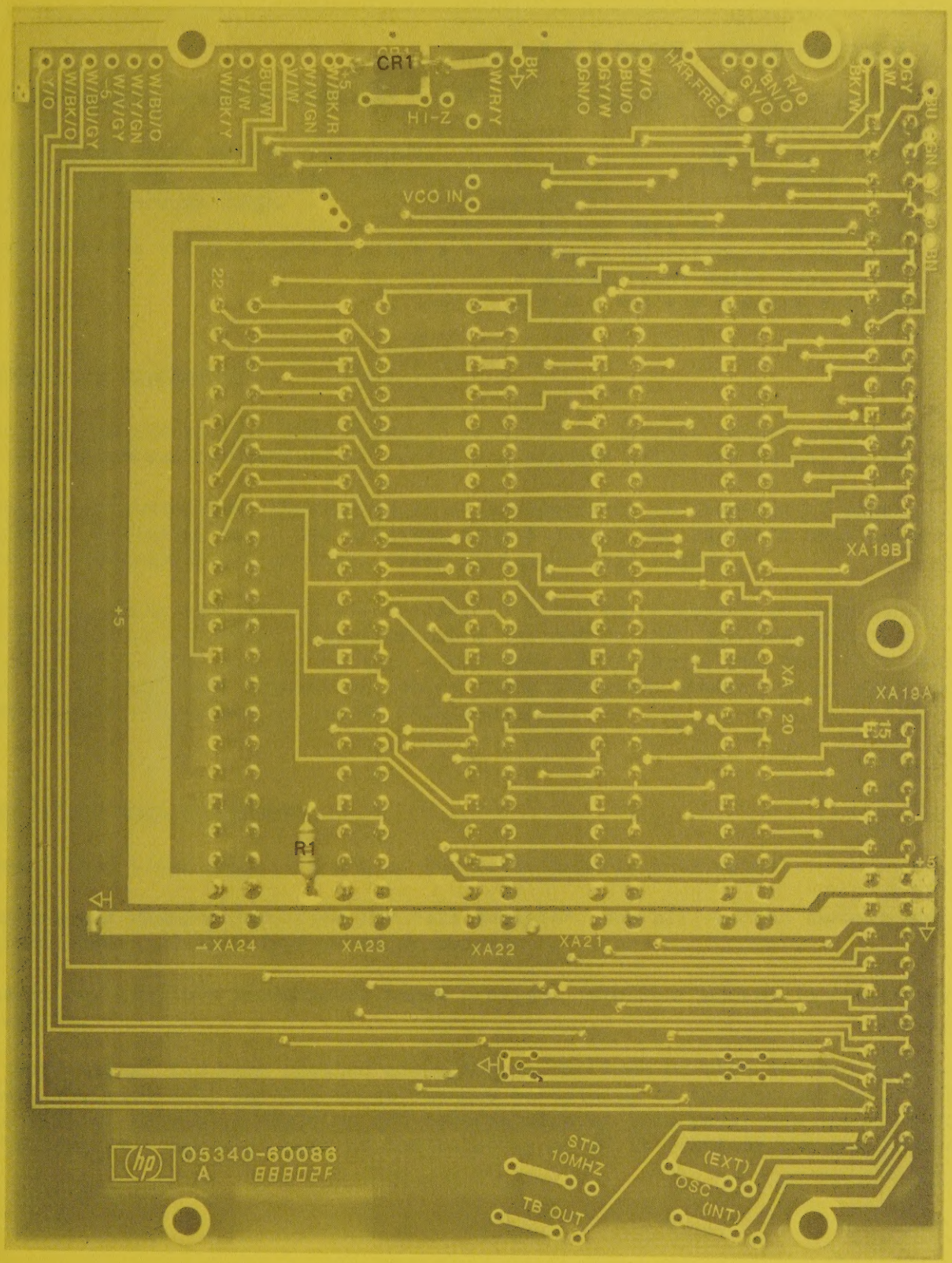

FRONT OF INSTRUMENT

Part of Figure 8-34. A36 Digital Motherboard Assembly
Component Locator (Bottom View)
(05340-60086) SERIES 2104

MANUAL UPDATING CHANGES **CHANGE DATE:** August 29, 1985

*** * * * MANUAL UPDATING COVERAGE* * * ***

This supplement adapts your manual to instruments with serial numbers prefixed through **2532.**

*** * * * MANUAL IDENTIFICATION * * * ***

Instrument: HP 5340A Frequency Counter Operating & Service Manual

Manual Part No: 05340-90021
Manual Microfiche: 05340-90022
Manual Print Date: Sept 1975

ABOUT THIS SUPPLEMENT

The information in this supplement is provided to correct manual errors and to adapt the manual to instruments containing changes after the manual print date.

Change and correction information in this supplement is itemized by page numbers corresponding to the original manual pages. The pages in this supplement are organized in numerical order by manual page number.

Manual updating supplements are revised as often as necessary to keep manuals as accurate as possible. Hewlett-Packard recommends that you periodically request the latest edition of this supplement. Free copies are available from all HP offices. When requesting copies quote the model number, print date, and part number listed at the top of this page.

HOW TO USE THIS SUPPLEMENT

Insert this title page in front of the title page in your manual.

Perform all changes specified for "All Serials", and all changes through the Series Prefix of your instrument or board.

Insert any complete replacement pages provided into your manual in the proper location.

If your manual has been updated according to the last edition of this supplement, you need only perform those changes pertaining to the new series prefix. See List of Effective Pages on the reverse side of this page. New information affecting "All Serials" will be indicated by a "#" in front of the page number.

LIST OF EFFECTIVE PAGES

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MANUAL CHANGES MODEL 5340A (05340-90021)

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SAFETY CONSIDERATIONS

The 5340A Frequency Counter is a Safety Class I instrument (provided with a protective earth terminal), designed and tested according to international safety standards. To ensure safe operation and to keep the instrument in safe condition, the user must follow the information, cautions, and warnings provided below and in the Operating and Service Manual.

```
***************
*             *
*   WARNING   *
*             *
***************
```

Before switching on this instrument, the protective earth terminal of the instrument must be connected to the protective conductor of the (mains) power cord. The mains plug shall only be inserted in a socket outlet provided with a protective earth contact. The protective action must not be negated by the use of an extension cord (power cable) without a protective conductor (grounding).

Whenever it is likely that the protection has been impaired, the instrument must be made inoperative and be secured against any unintended operation.

All protective earth terminals, extension cords, autotransformers, and devices connected to this instrument should be connected to a protective earth-grounded socket outlet. Any interruption of the protective earth grounding will cause a potential shock hazard that could result in personal injury.

For continued protection against fire hazard, replace the line fuse only with a 250V fuse of the same current rating and type. Do not use repaired fuses or short-circuited fuseholders.

Before switching on this instrument, make sure that it is adapted to the votlage of the ac power source.

Any maintenance or service requiring removal of protective covers should be performed by service-trained personnel who are aware of the hazard involved (for example, fire and electrical shock).

Capacitors inside the instrument may still be charged even if the instrument has been disconnected from its source of supply.

MANUAL CHANGES MODEL 5340A (05340-90021)

5340A RACK MOUNTING KIT:

The 5340A Frequency Counter is furnished less the RACK MOUNTING KIT described in this manual. If ordered at the same time as the instrument, the RACK MOUNTING KIT described in the manual is available as OPTION 098 at additional cost. If not ordered with an instrument, the RACK MOUNTING KIT is available as HP Part Number 05326-60046. Disregard any manual references stating the instrument is supplied with a rack mounting kit. Individual parts in the rack mounting kit are listed in Table 6-1 on Page 6-31 of the Operating & Service Manual.

5340A OPTION 005 - SERIES 2311

Beginning with Serial Number 2250A00838, 5340A Option 005 will consist of the following:

A2FL1	5088-7060	Power Splitter Assembly
	05340-60091	Preamp #1 Assembly (Rebuilt 05340-60591)
	05340-60092	Preamp #2 Assembly (Rebuilt 05340-60592)
W2	05340-60108	Cable Assembly-Rigid Input
W5	05340-60109	Cable Assembly-Rigid #2
W3	05340-60110	Cable Assembly-Rigid #1
W22	05340-60111	Cable Assembly-Flexible

All prior 5340A Option 005 units (Series 2088 to 2250A00837) were factory selected preamplifier assemblies which met Option 005 specifications. These units consisted of the following parts:

	5088-7003	Power Splitter Assembly
	5088-7006	Filter
	05340-60017	Preamp #1 Assembly (Rebuilt 05340-60517)
	05340-60027	Preamp #2 Assembly (Rebuilt 05340-60527)
W2	8120-3360	Cable Assembly-Rigid Input
W5	8120-3359	Cable Assembly-Rigid #2
W3	8120-3361	Cable Assembly-Rigid #1

CAUTION

The Preamplifier Assemblies 05340-60017/60027 and 05340-60091/60092 are not interchangeable.

The Power Splitter Assemblies 5088-7060 and 5088-7003 are not interchangeable.

The Cable Assemblies 8120-3360, 8120-3359, 8120-3361, and 05340-60108, 05340-60109, 05340-60110 are not interchangeable.

5340A OPTION 005 - SERIES 2338

Beginning with Serial Number 2338A09101, all standard 5340A units and all 5340A Option 005 units will consist of the same parts.

5340A Option 005 units will have factory-selected preamplifier assemblies which meet Option 005 specifications.

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 1-0. General Information:

All Series >Insert attached Page 1-0a, Safety Considerations, between Page 1-0 and 1-1.

Page 1-3, Table 1-3. Specifications:

All Series >Change Automatic Amplitude Discrimination to read as follows:
Automatic Amplitude Discrimination: Automatically selects the strongest of all signals present (within 250 MHz to 18 GHz phase-lock range), providing signal level is:
6 dB (Typical) above any signal within 200 MHz
10 dB (Typical) above any signal within 500 MHz
20 dB (Typical) above any signal 250 MHz--18GHz

Page 1-4, Table 1-3. Option 001 Specifications:

All Series >Change Aging Rate to:
"<5 X 10E-10/day after 24-hour warmup, for less than 24-hour off time, and <1.5 X 10E-7/year."
>Change Frequency Adjustment Range to:
">+1 X 10E-6 (>+10Hz from 10MHz) with 18-turn control."

Page 1-5, Table 1-3. Specifications:

All Series >Add the following after the Connector description:

Frequency Extension to 23 GHz (Option 005)
Option 005 enables frequency measurements up to at least 23 GHz with minimum sensitivity of -15 dBm from 18 GHz to 23 GHz in a laboratory environment. The counter meets all other published specifications for a standard instrument.

NOTE
A test procedure for checking the frequency response of an Option 005 counter is available in Service Note 5340A-15. A copy of the service note is available through your local HP Sales and Service Office.

Input 1
Frequency Range: 10 Hz - 23 GHz.
Sensitivity: 18 GHz - 23 GHz -15 dBm (20 - 30 deg C)
Maximum Input: +7 dBm
Dynamic Range: 18 - 23 GHz 22 dB (20 - 30 deg C)
Damage Level: +30 dBm +-7 VDC (total power not to exceed 1 watt, peak).

NOTE
Incompatible with Option 006, Microwave Limiter.

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 1-5, Table 1-3. Specifications:

2008

This change delineates replacement parts used to convert the HP Model 5340A from nixie tube display to LED's. When first turned on, the LED display shows an 8 for all eight digits for approximately six seconds as a test to determine that all sections of the LED displays are functioning properly.

>Add the following:

MEASUREMENTS from 18 GHz to 23 GHz (Option 005)
Option 005 (formerly Option H10) provides an instrument with additional testing to select a counter with extended frequency response characteristics.

Option 005 enables frequency measurements up to at least 23 GHz with minimum sensitivity of -15 dBm from 18 GHz to 23 GHz in a laboratory environment. The counter meets all other published specifications for a standard instrument.

NOTE

A test procedure for checking the frequency response of an Option 005 counter is available in Service Note 5340A-15. A copy of the service note is available through your local HP Sales and Service Office.

Page 2-14, Paragraph 2-46b:

All Series

>Change paragraph 2-46b to read:

b. Octave Ranges - Sending the proper ASCII character will program the 5340A for compensation of a particular octave range. This feature can save up to 110 milliseconds of search time when the approximate frequency of the input signal is known. However, the counter may lock on and measure any signal in another octave range if the signal amplitude is greater than the desired signal. Consequently, FM tolerance is degraded since the programmed phaselocked-loop compensation is not correct for the octave range with the higher signal. In octave range programming, an N check is not performed. When AUTO is programmed, the 5340A sweeps all octave ranges as in manual control. If the 10 Hz--250 MHz range is programmed (code G), the 5340A remains in the direct count mode and sensitivity falls off at frequencies above 200 MHz to as low as -20 dBm at 250MHz (In programmed AUTO mode or in front panel controlled manual mode, the counter automaticlly switches from direct to a locked mode at frequencies around 200 MHz to maintain a sensitivity of -30 dBm up to 500 MHz.)

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 4-50 & 4-51, Paragraphs 4-258 thru 4-266. A25/A26:

2008 >Delete Theory of Operation and Truth Table.

Page 4-53, Paragraphs 4-280 thru 4-282:

2008 >Delete paragraphs 4-280 through 4-282 describing A28 (05340-60022) -15V and +175V Regulators.

Page 5-2, Table 5-1. Assembly Identification:

2104 >Add A36 Digital Motherboard Assembly 05340-60086.
>Change A3 HP Part No to 05340-60089.

Page 5-6, Figure 5-2. Adjustment Procedures:

2108 >Add the following text before Step 5 a., Adjustment of A8:

"For instruments with Serial Prefix 2112A (and above) and/or Assemblies A10 (VCO NO. 2)/A12 (VCO NO.1) HP Part Number 05340-60008 (SERIES 2112 and above):

1. Before performing adjustments 5 and 6 disconnect the inhibit signal line (WHT/GRN/VIO) that is soldered to Assembly A16 Casting Motherboard (05340-60015).

2. Perform adjustments 5 and 6.

3. Reconnect the inhibit signal line (WHT/GRN/VIO) to the A16 Casting Motherboard after adjustments 5 and 6 have been completed."

Page 5-12, Figure 5-2. Adjustment Procedures:

All Serials >Add the following after paragraph n:

NOTE

Components A10R15 and A12R25 are set at the factory to allow the VCO's to track within 1 MHz of each other. These components should not be adjusted outside of the factory. If an adjustment is necessary, return the A10 and A12 boards to the factory on the Blue Stripe program.

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 5-13, Table 5-3. In-Cabinet Performance Check:

All Serials >Add the following above the first NOTE:
If Option 002 is included the Input 2 should be tested with thge 50 ohms terminator on the front or rear panel input not being used to accept the signal.

Pages 6-5/6-6, Table 6-1. A1 Preamplifier #1 Replaceable Parts:

\# All Serials >Change A1R1 from 0698-6123 (20K) to 0757-0449 RESISTOR-FXD 20K 5% .125W.

\# >Change A1A3*R1 from 0698-6123 (20K) to 0757-0449 RESISTOR-FXD 20K 5% .125W.

A1A4 (05340-60014) Preamplifier:

1644 >Change A1A4 SERIES to 1644.
>Change A1A4C9/C15 to 0160-2033 CAPACITOR-FXD 20PF +-5% 500VDC MICA.
>Change A1A4C10 to 0160-2533 CAPACITOR-FXD 280PF +-15% 300VDC MICA.
>Change A1A4C11/C13 to 0160-0179 CAPACITOR-FXD 33PF +-5% 300VDC MICA.
>Change A1A4C12 to 0160-2362 CAPACITOR-FXD 140PF +-2% 300WVDC MICA.

1844 >Change A1A4 (05340-60014) SERIES to 1844
>Change A1A4C4 to 0160-3028 CAPACITOR-FXD 10PF 10% 100WVDC.
>Add A1A4C25 0121-0475 CAPACITOR-VAR 2-22PF 100V; 28480-

2040 >Change A1A4C25 to 0121-0445, CV4.5-20PF.

2052 >Change A1A4 (05340-60014) SERIES to 2052.
>Change A1A4C3 to 0160-5254 1.5pF +-.25pF 100VDC CER.

2311 >Change A1 from 05340-60017 to 05340-60091, SERIES 2311.
See Note regarding 5340A OPT 005 - SERIES 2311 on page following safety considerations in beginning of these changes
>Delete A1R1 1810-0118.

2338 >Change A1A3R1 from 0757-0963 to 0698-6123 20K 5% .125W CC TC=-466/+875.

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Pages 6-5/6-6, Table 6-1. A1 Preamplifier #1 Assembly Replaceable Parts (Cont'd):

#	>Change A1A4R1 from 0698-6242 (1.2K) to 0757-0274 RESISTOR-FXD 1.21K 5% .125W. >Change A1A4R2 from 0698-5182 (3.9K) to 0698-3153 RESISTOR-FXD 3.83K 5% .125W. >Change A1A4R3, R9, R19, R27 from 0698-3374 (20 ohms) to 0698-3429 RESISTOR-FXD 19.6 OHM 5% .1W. >Change A1A4R4, R20-R24, R30 from 0698-5174 (200 ohms) to 0757-0407 RESISTOR-FXD 200 OHM 5%. >Change A1A4R5, R11, R12 from 0698-3380 (75 ohms) to 0757-0398 RESISTOR-FXD 75 OHM 5% .1W. >Change A1A4R6 from 0698-6283 (10 ohms) to 0757-0346 RESISTOR-FXD 10 OHM 5% .125 W. >Change A1A4R8 from 0698-5181 (3.65 ohms) to 0699-0400 RESISTOR-FXD 3.6K 5% .125W. >Change A1A4R10, R13, R14 from 0698-8128 (215K) to 0698-3441 RESISTOR-FXD 215K 5% .12W. >Change A1A4R15, R25 from 0698-5426 (10K) to 0757-0442 RESISTOR-FXD 10K 10% .125W. >Change A1A4R16, R26 from 0698-7102 (5.1K) to 0757-0438 RESISTOR-FXD 5.1K 5% .125W. >Change A1A4R17, R28 from 0698-5103 (430 ohms) to 0698-3447 RESISTOR-FXD 422 OHM 5%. >Change A1A4R18 from 0698-8127 (22 ohms) to 0698-3430 RESISTOR-FXD 21.5 OHM 5%. >Change A1A4R29 from 0674-2405 (24 ohms) to 0698-8535 RESISTOR-FXD 24.2 OHM 5% .125. >Change A1A4R31 from 0698-3378 (51 ohms) to 0758-0124 RESISTOR-FXD 51 OHM 5%.

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Pages 6-6/6-7, Table 6-1. A2 Preamplifier #2 Replaceable Parts:

All Serials

>Change A2A3R1* to 0683-2245 RESISTOR 220K 5% .25W FC TC=-800/+900. *Factory Selected Value.
>Change A2A4C3 to 0160-0987 CAPACITOR-FXD 12PF +-5% 500VDC MICA.
>Change A2A4C20 HP part number to 0160-0183
>Change A2A4C21 HP part number to 0160-2033.
>Change A2A4C22 HP part number to 0140-0146.
>Change A2A4L9 HP part number to 9140-0143.

\# >Change A2Q2 from 1853-0015 to 1853-0007 TRANSISTOR 2N3251.

2028 >Instruments with the following serial numbers have changes indicated for SERIES 2044.

2048A07027	2028A07058	2028A07065	2028A07074
2028A07033	2028A07059	2028A07066	2028A07075
2028A07037	2028A07060	2028A07067	2028A07078
2028A07056	2028A07063	2028A07070	2028A07081
2028A07057	2028A07064	2028A07071	2028A07086

2044 >Change A2A4 (05340-60040) SERIES to 2044.
>Add an asterisk (*) to A2A4L9.
>Add A2A4L9 9140-0180 2.7UH as an alternate part.

2052 >Change A2A4 (05340-60040) SERIES to 2052.
>Change A2A4C14 to 0160-4799 CAPACITOR-FXD 2.2PF +-.25PF 100VDC CER.
>Change A2A4C6,A2A4C7 to 0160-4789 CAPACITOR-FXD 15PF +-5% 100VDC CER 0+-30.

2311 >Change A2 from 05340-60027 to 05340-60092, SERIES 2311. See Note at beginning of Manual Change Sheet.
>Delete FL1 5088-7006.

2338 >Change A2A3R1 from 0683-2245 to 0698-6123 20K 5% .125W CC TC=-466/+875.

\# >Change A2R1 from 0698-6123 (20K) to 0757-0449 RESISTOR-FXD 20K 5% .125W.

\# >Change A2A3*R1 from 0698-6123 (20K) to 0757-0449 RESISTOR-FXD 20K 5% .125W.

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Pages 6-7/6-8, Table 6-1. A3 HI-Z Input Amplifier Replaceable Parts:

All Serials	>Change A3C10 HP part number to 0160-2326.
2104	>Change A3 from 05340-60001 to 05340-60089, Series 2104. >Delete "(loaded on 05340-20001 Blank Board)". >Add A3J1 1250-1368 CONNECTOR-RF SMB M PC 50-OHM.
2532	>Change A3 from 05340-60089 to 05340-60095, SERIES 2532. >Change A3U1 from 1820-0754 to 1DD8-0503 IC-DIG SPECIAL. >Add A3R25 0698-7201 RESISTOR-FXD 34.8 1% .05W F. >Add A3R26 0757-0401 RESISTOR-FXD 100 1% .12W F.

Pages 6-9/6-10, Table 6-1. A5 Search Assembly Replaceable Parts:

2028	>Change A5 (05340-60003) SERIES to 2028. >Change A5Q1 to 1855-0082.

Pages 6-10/6-11, Table 6-1. A6 Search Programmer Assy Replaceable Parts:

All Serials	>Change A6R4, R6, R8, R10, R12, R14, R28-R33 from 0698-7185 (220K) to 0698-3454 RESISTOR-FXD 215K 5% MF. >Change A6R16-R21 from 0698-3376 (43K) to 0757-0316 RESISTOR-FXD 42.2 OHM 5% .1W. >Change A6R22 from 0698-8072 (39K) to 0698-3161 RESISTOR-FXD 38.3K 5% 1/8W. >Change A6R23 from 0698-5182 (3.9K) to 0698-3153 RESISTOR-FXD 3.83K 5% .125W. >Change A6R24 from 0698-6242 (1.2K) to 0757-0274 RESISTOR-FXD 1.21K 5% .125W. >Change A6R25 from 0698-5996 (560) to 0757-0417 RESISTOR-FXD 562 OHM 5%. >Change A6*R26 from 0698-5175 (360 ohm) to 0698-3445 RESISTOR-FXD 348 OHM 5%. >Change A6*R27 from 0698-5174 (200 ohm) to 0757-0407 RESISTOR-FXD 200 OHM 5%. >Change A6R40-R45 from 0698-5999 (4.7K) to 0757-0940 RESISTOR-FXD 4.7K 5% .125W.

Pages 6-11/6-12, Table 6-1. A7 DC Amplifier/Compensator No. 1 Assembly Replaceable Parts:

All Serials	>Change A7R26 to 0757-0924 RESISTOR 1K C4-1/8-TO-511RF.

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Pages 6-12/6-13, Table 6-1. A8 Bandpass Filter/Phase Detector Repl Parts:

1804

>Change A8 (05340-60006) SERIES to 1804.
>Change A8C10, C12, C14 to 0160-0207 CAPACITOR FXD .01UF 5% 200VDCW POLYE.

NOTE

(0160-0207) capacitors are recommended replacements for all 05340-60006 assemblies.

Pages 6-13/6-14, Table 6-1. A9 DC Amplifier/Compensator No. 2 Repl Parts:

All Serials

>Change A9R12 to 0683-6245 RESISTOR 620K.
>Add an asterisk (*) adjacent to A9R12 to indicate factory selected value.

#

>Change A9R11 from 0698-6681 (9.10 ohms) to 0699-0705 RESISTOR-FXD 9.10 5%.

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Pages 6-14/6-15, Table 6-1. A10 VCO No. 2 Assembly Replaceable Parts:
A12 VCO NO. 1 Assembly Replaceable Parts:

2036

>Change A10/A12 (05340-60008) SERIES to 2036.
>Change C10/C12 TO 0160-2263 CAPACITOR 18PF 500V CERAMIC. Add an asterisk (*) to indicate factory-select value.

2108

>Change A10/A12 (05340-60008) SERIES to 2108.
>Change R22 to 0757-0954 RESISTOR 18K 2% .125W F TC=0+-100.
>Change C4 to 0180-3105 CAPACITOR-MATCHED SET 1.5UF +-10% 20WVDC.
>Change C7 to 0180-3104 CAPACITOR-MATCHED SET 1.8UF +-10% 20WVDC.

NOTE

HP Part Numbers 0180-3104 and 0180-3105 are sets of two matched capacitors to replace A10C7/C12C7 and A10C4/A12C4.

05340-60008 is a set of two matched boards to replace both assemblies A10 (VCO No 2) and A12 (VCO No. 1).

2112

>Change A10/A12 (05340-60008) SERIES to 2112.

2432

>Add 1200-0647 SOCKET-XSTR 3-CONT TO-18 DIP-SLDR, Qty 3.

#

>Change A10R17 from 0698-6000 (2.7K) to 0698-0085 RESISTOR-FXD 2.7K 5% .125W.
>Change A10R19 from 0698-3378 (51 ohms) to 0758-0124 RESISTOR-FXD 51 OHM 5%.
>Change A10R21 from 0698-5174 (200 ohms) to 0757-0407 RESISTOR-FXD 200 OHM 5%.
>Change A10R23 from 0698-3113 (100 ohms) to 0757-0401 RESISTOR-FXD 100 OHM 5%.

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Pages 6-16/6-17, Table 6-1. A14 Limiter/Amplifier/Mixer Assy Replaceable Parts:

All Serials	>Change A14C1/C10/C11/C23/C26 to 0160-3277 CAPACITOR FXD .01UF +-20% 50VDC. >Change A14C2/C3/C4/C15/C16 to 0160-2055 CAPACITOR FXD .01UF +80-20% 100VDC.

Page 6-18, Table 6-1. A16 Mother Board Assembly Replaceable Parts:

All Serials	>Change A16XA4 thru XA15 to 1251-2035 CONNECTOR-PC EDGE 15-CONT/ROW 2-ROWS.
1944	>Change A16 (05340-60015) SERIES to 1944. >Add C9*, 0160-3875 CAPACITOR-FXD 22PF +-5% 200VDC CER 0+-30.
2112	>Change A16 (05340-60015) SERIES to 2112. >Delete C9* 0160-3875, 22PF.

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Pages 6-18/6-19, Table 6-1. A17 Direct Count Amplifier Assembly Repl Parts:

All Serials

>Change A17A1U4 from NOT ASSIGNED TO 1820-1179 IC-TTL DIGITAL.
>Delete A17A1U5 from parts list.
>Delete A17A1U3 from parts list.

1724

>Change A17A1 (05340-60038) SERIES to 1724.
>Add A17A1R24 0698-7964 RESISTOR 100K 5% .125W CC TC=466/+875.

1936

Instruments with Serial Numbers 1936A06526 thru 1936A00660 have changes indicated for Series 1944.

1936

>Add the following after A17 Description:
"A17 is available only as separate parts consisting of the housing, spacer, cover, and A17A1 circuit board 05340-60038) plus cables W10 and W11."

>Change HP part number and Mfr part number of HOUSING, DC AMPLIFIER to 05340-20082.
>Delete A17W1 cable assembly 05340-60046.

2311

>Change L5 from 9100-2252 (.27UH) to 9140-0353 COIL-FXD .43uh.

>Change A17R24 from 0698-7964 (100K) to 0757-0465 RESISTOR-FXD 100K 5%.

>Change A17A1R1 from 0698-5180 (2K) to 0757-0283 RESISTOR-FXD 2K 5% .125W.
>Change A17A1R2, R3, R13 from 0698-3113 (100 ohm) to 0757-0401 RESISTOR-FXD 100 OHM 5%.
>Change A17A1*R14 from 0698-5177 (820 ohms) to 0757-0421 RESISTOR-FXD 825 OHM 5%.
>Change A17A1R15 from 0675-1021 (1K) to 0757-0280 RESISTOR-FXD 1K 10% .12W.
>Change A17A1R16 from 0698-3378 (51 ohms) to 0758-0124 RESISTOR-FXD 51 OHM 5%.
>Change A17A1R17 from 0698-3381 (150 ohms) to 0757-0284 RESISTOR-FXD 150 OHM 5%.
>Change A17A1R18 from 0698-3114 (300 ohms) to 0757-1108 RESISTOR-FXD 300 OHM 5% .1W.
>Change A17A1R23 from 0698-5174 (200 ohms) to 0757-0407 RESISTOR-FXD 200 OHM 5%.

2532

>Change A17A1 from 05340-60038 to 05340-60096, SERIES 2532.
>Change A17A1U3 from 1820-0754 to 1DD8-0502 IC-DIG SPECIAL.
>Change A17A1U5 from 1820-1179 to 1820-2149 IC-DIG DUAL GATE.

NOTE

When replacing A17A1 (05340-60038) with A17A1 (05340-60096), A22R30 must be changed to 42.2 ohms (0757-0316).

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 6-20, Table 6-1. A20 Time Base Board Assembly Replaceable Parts:

All Serials	>Change A20U24 to 1820-1147 IC TTL 40 MHz PRESETTABLE DECADE.
2112	Instruments with the following Serial Numbers have changes indicated for Series 2116. 2112A07754 2112A07758 2112A07763 2112A07767 2112A07755 2112A07759 2112A07765 2112A07769 2112A07756 2112A07760 2112A07766 2112A07770 and 2112A07773 thru 2112A07875
2116	>Change A20 (05340-60073) SERIES to 2116.
2250	>Change A20 (05340-60073) SERIES to 2250. >Delete 1200-0470 SOCKET-IC 14-PIN.
2406	>Change A20 (05340-60073) SERIES to 2406. >Change U24 from 1820-1147 to 1820-0751 IC-TTL 74196N CTR.
2432	>Change A20 (05340-60073) SERIES to 2432. >Change U24 from 1820-0751 to 1820-1251 IC-COUNTER TTL LS DECD ASYNCHRON.

Page 6-21, Table 6-1. A21 Control Board Assembly Replaceable Parts:

1644	>Change A21R7 to 0757-0968 RESISTOR 68k 2% .125W F TC=+-100.
1804	>Change A21 (05340-60021) SERIES to 1804 >Add an asterisk (*) following A2R6 "Description".
2008	>Change A21 (05340-60021) SERIES to 2008. >Change R7 to 0757-0962 RESISTOR 39K 1/4W 2%. >Change C4 to 0180-0210 CAPACITOR-FXD 3.3UF 15V.
2044	>Change A21 (05340-60021) SERIES to 2044. >Change value of factory-selected A21R6 to 0757-0955, 20K 2%.

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Pages 6-21/6-23, Table 6-1. A22 High Frequency Counter Assy Replaceable Parts:

All Serials
>Change A22U2 from 1820-1019 to 1DC9-0001 IC-DIG BI-QUIN.

1928
>Change A22 (05340-60016) SERIES to 1928.
>Delete C1, 0160-3879, and change description to NOT ASSIGNED.
>Change U1 to 1820-1052 IC XLTR ECL ECL-TO-TTL QUAD 2-INPUT.

1936
Instruments with serial numbers 1936A06451 thru 1936A06525 are supplied with a Series 1328 Circuit Board for A22.

2532
>Change A22R30 from 0683-5105 (51 ohms) to 0757-0316 RESISTOR-FXD 42.2 1% .125W F TC=0+-100.
>Add an asterisk (*) to A22R30 to indicate a factory-selected value.

Page 6-23, Table 6-1. A23 Count Register Assembly Replaceable Parts:

All Serials
>Change A23U8/U9 to 1820-1300 IC SHF-RGTR TTL LS R-5 PRL-IN PRL-OUT; SN74LS195AN.

Page 6-23, Table 6-1. A24 Display Register Assembly Replaceable Parts:

2008
>Change A24 (05340-60019) SERIES to 2008.
>Change all IC's to low-power types as follows:

REF DESIGNATIONS	OLD	NEW
U1,U9,U11,U16,U17	1820-0294	1820-1433 SN74LS164N
U2	1820-0657	1820-1851 SN74LS148N
U3,U14	1820-0174	1820-1199 SN74LS04N
U4	1820-0616	1820-1470 SN74LS157N
U5,U10	1820-0069	1820-1204 SN74LS20N
U6,U15	1820-0587	1820-1202 SN74LS10N
U7	1820-0583	1820-1197 SN74LS00N
U8,U13	1820-0054	1820-1197 SN74LS00N
U12	1820-0589	1820-1207 SN74LS30N
U18	1820-1047	1820-1418 SN74LS42N

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Pages 6-23/6-25, Table 6-1. A25 (05340-60020) Replaceable Parts:

All Serials
>Change A25Q1 thru A25Q6 to 1854-0575 TRANSISTOR-NPN SI PD=625MW FT=50 MHZ; MPS-A42.

1644
>Change A25 SERIES A25R11.
>Delete A25CR1 and A25R11.

1904
>Change A25 SERIES to 1904.
>Add A25Q8, Q9, Q10 1854-0575 TRANSISTOR NPN SI PD=625MW FT=50 MHZ.
>Add A25R28,R29,R30 0757-0934 RESISTOR 2.7K 2% .125W F TC=0 +-100.

2008
The following instruments with Series 2008 also have the changes indicated for Series 2012.
2008A6765 2008A6773 2008A6682 2008A6808 2008A6819
2008A6771 2008A6780 2008A6804 2008A6811 2008A6822
2008A6772 2008A6796 2008A6807 2008A6816
>Replace A25 parts list with Table 1.

Table 1. A25 (05340-60020) Replaceable Parts:

Reference Designation	HP Part Number	Description
C1	0180-0228	CAPACITOR:FXD 22UF 10% 15WVDC TA
DS1-8	1990-0540	DISPLAY:7-SEGMENT
DS9-17	1990-0696	LED VISIBLE LIGHTBAR
Q1	1854-0071	TRANSISTOR:SI
R1,3-5,8-10,14	1810-0265	RESISTOR:8-SECTION 680ohms
R2	1810-0235	RESISTOR:8-SECTION 150ohms
R6	0683-1535	RESISTOR:FXD 15K 5% .25W
R7	0683-1035	RESISTOR:FXD 10K 5% .25W
R11-13	0683-1515	RESISTOR:FXD 150ohms 5% .25W
R15	0683-6835	RESISTOR:FXD 68K 5% .25W
U1	1820-1199	IC:SN74LS04
U2-9	1820-1688	IC:SN74LS247
U10	1820-1426	IC:SN74LS145
U11	1820-1418	IC:SN74LS42

2012
>Change R6 in Table 1, A25 Replacement Parts, from 0683-1045 (100K) to 0683-1535.
>Change the value of R6 from 100K to 15K ohms.

2044
>Change A25 SERIES, Table 1, A25 Replacement Parts, to 2044.
>Delete CR1, 1901-0040, 30WV SI diode.
>Change R6 to 0683-1045, 100K 5% .250W.
>Add R15, 0683-6835 68K 5% .250W.

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 6-25, Table 6-1. A26 Blanking Assembly Replaceable Parts:

All Serials >Change A26Q1 thru A26Q5 to 1854-0575 TRANSISTOR NPN SI PD=625MW FT=50 MHZ; MPS-A42.
>Change A26Q6 thru A26Q10 to 1853-0336 TRANSISTOR PNP S1 PD=625MW, FT=50 MHZ; MPS-A92

Pages 6-25/6-26, Table 6-1. A28 Regulator Assembly (-15 & +175V) Repl Parts:

All Serials >Change A28Q9 to 1854-0575 TRANSISTOR NPN SI PD=625MW FT=50MHZ.

2008 >Replace A28 (05340-60022) Replaceable Parts, Pages 6-25 and 6-26 with Table below:

A28 (05340-60086) -5V Regulator Replaceable Parts (SERIES 2008)

REFERENCE DESIGNATION	HP PART NUMBER	DESCRIPTION
C2,3,7	0180-0374	CAPACITOR:FXD 22UF 10% 15WVDC TA
C4,5	0160-2141	CAPACITOR;FXD 680PF 20% 1KV CER
CR2	1902-3234	DIODE;SI 30WVDC
MPQ5	1205-0219	HEAT SINK FOR Q5
MPQ10	1205-0033	HEAT SINK FOR Q10
Q1,3	1854-0071	TRANSISTOR;SI NPN
Q5	1853-0254	TRANSISTOR;SI PNP
Q7,8	1853-0020	TRANSISTOR;SI PNP
Q10	1854-0039	TRANSISTOR;SI PNP
R1	0683-4705	RESISTOR;FXD 47OHMS 5% .25W
R3	0683-1035	RESISTOR;FXD 10K 5% .25W
R5	0757-0933	RESISTOR;FXD 2.4K 5% .125W
R6	0698-4471	RESISTOR;FXD 7.15K 5% .125W
R7	2100-2633	RESISTOR;TRIMMER 1K 10%
R11,12	0757-0900	RESISTOR;FXD 100K 2% .125W
R13	0757-0924	RESISTOR;FXD 1K 2% .125W
R14	0757-0952	RESISTOR;FXD 15K 2% .125W
R16	0811-1672	RESISTOR;FXD 3.3OHMS 5% 2W
TP1,2	0360-0124	TERMINAL;STUD
U1	1826-0016	IC:LM204 V REGULATOR

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 6-26, Table 6-1. A29 Regulator Assembly (+15V) Replaceable Parts:

2040A	>Change A29R7 to 0683-0475 RESISTOR-FXD 4.7 OHMS.

Page 6-26, Table 6-1. A30 Power Supply Mother Board Replaceable Parts:

All Serials	>Change A30XA28/XA29/XA31/XA32 HP part number to 1251-2035. >Change A30CR1/CR2/CR3 to 1901-0366 DIODE-FW BRIDGE 400V 1A.
1728	>Change A30 (05340-60029) SERIES to 1728. >Change A30C1/C2 to 0180-2541 CAPACITOR-FXD 1800UF +75-10% 40VDCW ALUM; 56289; 602D182G040AA2A. >Change A30C3/C4 to 0180-2387 CAPACITOR-FXD 2200UF +75-10% 30VDCW AL; 56289; 602D222G030AA2A.
1804	>Change A30 (05340-60029) SERIES to 1804. >Change A30CR1,CR2,CR3 to 1906-0027; Mfr Code 04713; MDA922-6.
	NOTE Either 1901-0366 or 1906-0027 diodes can be used for replacement.
1816	>Change A30 (05340-60029) SERIES to 1816. >Change A30CR1,CR1,CR3 to 1901-0366 DIODE-FW BRDG 400V 1A; 28480.
2008	>Change A30 (05340-60029) SERIES to 2008. >Delete A30CR1.

Page 6-28, Table 6-1. A36 Digital Motherboard Assembly Replaceable Parts:

2104	>Add A36 05340-60086 DIGITAL MOTHERBOARD ASSEMBLY, SERIES 2104. >Add A36CR1, 1901-0028 DIODE-PWR RECT 400V 750MA DO-29. >Add A36R1, 0757-0934, RESISTOR 2.7K 2% .125W F TC=0+-100. >Add A36XA19A, XA19B; 1251-2035 CONNECTOR-PC EDGE 15-CONT ROW 2-ROWS. >Add A36XA20 thru XA24, 1251-1365, CONNECTOR-PC EDGE 22-CONT/ROW 2-ROWS.

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Pages 6-29/6-31, Table 6-1. Replaceable Chassis Parts:

All Serials

>Change F1 for 115V operation to 2100-0007; FUSE 1A 250V TD 1.25X.25 UL/IEC.
>Change F1 for 230V operation to 2110-0202; FUSE .5A 250V TD 1.25X.25 UL/IEC.
>Change TH1 to 3103-0057 SWITCH THERMAL FXD Open 85 C (+185 F) Close 65.5 C (+150 F).

NOTE

Above fuse replacements recommended for use in all instruments.

1532A03151 and above

>Change XF1 fuseholder (1400-0084) to the following recommended replacement for all instruments:

2100-0465 FUSEHOLDER BAYONET CAP 75915; 345003-020.
2110-0470 FUSEHOLDER BODY UL/IEC 75915; 345003-010.
2950-0054 NUT FUSEHOLDER MTG 1/2-28; 28480; 2950-0054.

1840

>Change S1 to 3101-2269 SWITCH-TGL SUBMIN DPDT NS 3A 250VAC (AC ON/OFF).
>Change W1 (05505-60019) to 05341-60031 in HP part no and Mfr part no columns.

1936

>Delete C1, 0160-3043, and change Description to NOT ASSIGNED.
>Add C9, C10 0160-4439 CAPACITOR-FXD 4700PF +-20% 250VAC (RMS).
>Change W10 from 05340-60049 to 05340-60081.
>Change W11 from 05340-60050 to 05340-60082.
>Change S2 from 3101-1216 to 3101-0052.
>Change XF1 2100-0470 to 2110-0564 FUSEHOLDER-BODY EXTR-POST BAYONET CU 12A 250V; 28480;2110-0564.
>Change XF1 2110-0465 to 2110-0565 FUSEHOLDER-CAP BAYONET.
>Change XF2 2950-0054 to 2110-0569 FUSEHOLDER-MTG NUT HEX METRIC.

2008

>Change MP16 Window, Display to 05340-00033.
>Change T1 Transformer, Power to 9100-3071.

2040

>Change A29R7 to 0683-0475, RESISTOR-FXD 4.7 OHMS.

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Pages 6-29/6-31, Table 6-1. Replaceable Chassis Parts:

2104

>Delete CR2 1901-0028 (DIODE-PWR RECT).
>Delete R3, 0683-2725 (Resistor 2.7K).
>Delete Part Numbers for XA19A thru XA24.
>Change Description for XA19A thru XA24 to PART OF A36 (SEE LISTING FOR).
>Change W4 CABLE ASSEMBLY FROM 05340-60034 TO 05340-60101.
>Change W12 CABLE ASSEMBLY FROM 05340-60051 TO 05340-60102.
>Change W13 CABLE ASSEMBLY FROM 05340-60052 TO 05340-60103.
>Change W15 CABLE ASSEMBLY FROM 05340-60054 TO 05340-60104.
>Change W16 CABLE ASSEMBLY FROM 05340-60065 TO 05340-60105.
>Delete 05340-00016, Strip-ground.

2112

>Delete F1, 2110-0202, (for 230V operation).
>Add to MP17 (05340-00034) Description: "NOT USED WITH OPTION 006 INSTALLED".
>Change the HP Part Number and description of the following cable assemblies:
W2 (05340-60028) to 8120-3360 CABLE ASSY-RIGID (NOT USED WITH OPTION 002 or OPTION 006 INSTALLED).
W3 (05340-60033) TO 8120-3361 CABLE ASSY-RIGID.
W5 (05340-60013) TO 8120-3359 CABLE ASSY-RIGID.

2148

>Change MP15 (Front Panel) HP Part Number to 05340-00039.
>Change MP17 (Front Panel Trim) HP Part No to 05340-20091.

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 6-33, Table 6-2. 5340A Mechanical Parts:

2008 >Replace MP17 with 05340-00034.
>Replace MP18 with 05340-00035.
>Add MP20, Sub Panel 05340-00036.

NOTE

When HP Part Number 05340-00034 is used on a standard HP Model 5340A or HP 05340-00035 is used for Option 002, subpanel MP20 (05340-00036) is required to complete the front panel trim.

2112 >Add to MP17 (05340-00034) Description: "NOT USED WITH OPTION 006 INSTALLED".

Page 6-34, Table 6-3. Replaceable Parts, Option 001.

All Serials >Change A33CR5 HP part number to 1902-3182.

2250 >Change A18 to 10811-60111.
>Delete "NOT RECOMMENDED FOR FIELD REPAIR, FOR REPLACEMENT OR REPAIR ORDER".
>Delete 10544-60511.

Page 6-35, Table 6-4. Replaceable Parts - Option 002, Option 006:

2008 >Change MP18 to 05340-00035.
>Add MP20, 05340-00036, Subpanel.

2112 >Add Option 006 and the following replaceable parts to Table 6-4:

HP PART NUMBER	DESCRIPTION
8120-3340	Option 006, 18 GHz Cable Assembly.
8120-3341	Option 006, 18 GHz Cable Assembly.
5088-7049	Option 006, Limiter.
05340-00038	Option 006, Front Panel.

>Change W18 (05340-60060) to HP Part No 8120-3362, CABLE ASSY-RIGID.

2148 >Add 05340-00040, Option 002 Panel-Front.
>Add 05340-00041, Option 006 Panel-Front.

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 6-36, Table 6-5. A19 Interface "B" (Option 011) Replaceable Parts:

All Serials >Change A19R4, R5 from 0698-8354 (270 ohms) to 0698-3132 RESISTOR-FXD 261 OHM 5%.
>Change A19R6, R7 from 0675-1021 (1K) to 0757-0280 RESISTOR-FXD 1K 10% .12W.
>Change A19R8, R9 from 0698-5180 (2K) to 0757-0283 RESISTOR-FXD 2K 5% .125W.
>Change A19R10 from 0698-3113 (100 ohms) to 0757-0401 RESISTOR-FXD 100 OHM 5%.
>Change A19R11 from 0698-6984 (470 ohms) to 0698-0082 RESISTOR-FXD 464 OHM 5%.

>Change A19U5, U6 from 1820-0710 to 1820-1470 IC-TTL 93L22.

Page 6-37, Table 6-5. Option 011 Replaceable Parts:

1532A03151 >Change A35MP1 to 0380-0644. These two hexagonal studs (0380-0644) for the HP-IB connector, accomodate lock screws with (ISO) metric thread M3.5X 0.6 or an equivalent Optimum Metric Fastener System (OMFS) thread 3.5P06.

Metric hardware supplied by HP for HP-IB connectors can be identified by the black finish. If metric tools are not available, a 9/32-inch hex socket will fir the 7mm hex stud.

Conversion kits for converting earlier instruments to use the metric lock screws are available through any HP Sales or Service Office.

CAUTION

THE THREADS OF THE METRIC HARDWARE WILL NOT FIT THE 6/32 UNC THREADS ON HARDWARE WITH A SILVER FINISH. THE THREADS WILL STRIP IF THE HARDWARE IS INTERMIXED.

Page 7-16, Paragraph 7-21. Option 001 Parts:

All Serials >Change A33 part number to 05340-60080.
>Change T2 part number to 9100-3049.

Page 7-18, Paragraph i:

All Serials >Change part number for BNC connector to 1250-0102.

>Change 08731-201 to 2950-0054 NUT-HEX.

MANUAL CHANGES MODEL 5340A (05340-90021)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 8-5, Figure 8-3. Bottom Internal View and Cable Numbers and Connections (with Options 001, 002, and 011 Installed):

2104 >Replace the Table of Cable Numbers and Connections with the table attached.

Page 8-11, Figure 8-7. A1 Preamplifier Assembly No. 1:

1644 >Change A1A4 (05340-60014) SERIES to 1644.

1844 >Change A1A4 (05340-60014) SERIES to 1844.
>Change A1A4C4 value to 10pf.
>Add A1A4C25 variable capacitor (2-22pF) in parallel with A4C4 and A4L1.
>Change A1A4 capacitor listing (C1-24) to C1-25 under Reference Designations.

2338 >Change A1 SERIES to 2338.
>Change A1A3R1 value from 43K to 20K.

2040 >Change A1A4C25 value to 4.5-20.

>Change A1A4R2 value from 3.9K to 3.83K.
>Change A1A4R3, R9, R19, R29 values from 20, to 19.6.
>Change A1A4R17, R28 values from 430 to 422.
>Change A1A4R18 from 22 to 21.5.

Page 8-13, Figure 8-8. A2 Preamplifier Assembly No. 2:

All Serials >Change A2A3R1 value to 220K ohms.
>Add an asterisk (*) adjacent to A2A4C3 and A2A4R4.

Table of Active Elements:
>Change A2Q2 from 1853-0015 to 1853-0007, 2N3251.

2044 >Add an asterisk (*) to A2A4L9, change average value shown to 2.7.

2052 >Change C6 and C7 to 15pf.

2338 >Change A2A3R1 value from 220K to 20K.

Figure 8-3. 5340A Bottom Internal View and Cable Numbers and Connections (with Options 001, 002, and 011 Installed)

Cable No.	Cable Name	Connects From	Connects To	HP Part No.
W1	AC Line Switch	S1	S6	05505-60019
W2	18 GHz Input	J1	CP1	05340-60028
W3	Sampler #1	CP1	A1J2	05340-60033
W4	A3 Output	A3 Output	A36XA22(21) via HI-Z feedthru	05340-60101
W5	Sampler #2	CP1	A2J2	05340-60013
W6	A1 Output	A1J1	A16J4	05340-60035
W7	VCO 1/A1A2	A1A2J1	A16J5	05340-60044
W8	AC Line Cord	J6	115/230VAC	8120-1378
W9	A2 Output	A2J1	A16J3	05340-60048
W10	A2FL1 Input	A17J1	A2FL1J4	05340-60081
W11	Direct Count Output	A17J2	A22J1	05340-60082
W12	10 MHz Doubler	A36XA19A(E) via STD 10MHz feedthru	A16J1	05340-60102
W13	VCO 1/A22	A16J6	A36XA22(19) via VCO IN feedthru	05340-60103
W14	CO 2/A2A2	A2A2J1	A16J7	05340-60053
W15	Harm Freq A14/A20	A16J2	A36XA20(10) via HAR FREQ feedthru	05340-60104
W16	Main Chassis	Main Cable Harness interconnecting mother boards to front and rear panel controls and jacks.		05340-60105
W17	Low Freq Input Option 002	J8	J4	05260-6034
W18	18 GHz Input Option 002	J2	CP1	05340-60060
W19	ASCII Bus	A19J1	A34P1	05340-60063
W20	ASCII Bus	A19J2	A34P2	05340-60063
W21	Remote Prog Digital Output	A35J1	External	8120-1833

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 8-14, Part of Figure 8-9. A3 HI-Z Input Amplifier Assembly Waveforms:

All Serials	>Change identification letters for measurement data under waveforms from B to C and C to B.

Page 8-15, Figure 8-9. A3 HI-Z Input Amplifier Assembly

2104	>Change A3 part number from 05340-60001 to 05340-60089, Series 2104. >Add reference designator "J1" to connector labeled HI-Z OUTPUT (W4). >Replace component locator with attached component locator, Series 2104.
2532	>Change A3 part number from 05340-60089 to 05340-60095, SERIES 2532. >Add R25 (34.8 ohms) between R11 and U1Pin2. >Add R26 (100 ohms) from U1Pin4 to ground. TABLE OF ACTIVE COMPONENTS: >Change A3U1 from 1820-0754 to 1DD8-0502. COMPONENT LOCATOR: >Change A3 part number from 05340-60089 to 05340-60095, SERIES 2532. >Add R25 between R16 and J1. >Add R26 between J1 and R7.

Page 8-19, Figure 8-11. A5 Search Assembly:

2028	>Change A5 (05340-60003) SERIES to 2028. >Change Q1 to 1855-0082 in Active Elements Table.

Page 8-21, Figure 8-12. A6 Search Programmer Assembly Schematic Diagram:

All Serials	>Change A6R4, R6, R8, R10, R12, R14, R28-R33 values from 220K to 215K. >Change A6R16-R21 values from 43K to 42.2. >Change A6R22, R23 values from 3.9K to 38.3K. >Change A6R25 value from 560 to 562. >Change A6*R26 value from 360 to 348.

Page 8-23, Figure 8-13. A7 DC Amplifier/Compensator No. 1 Assembly:

All Serials	>Change A7R26 value to 1000 ohms.

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 8-25, Figure 8-14. A8 Bandpass Filters/Ø Detector Assembly:

1804 >Change SERIES (05340-60006) to 1804.

Page 8-27, Figure 8-15. A9 DC Amplifier/Compensator No. 2 Assembly:

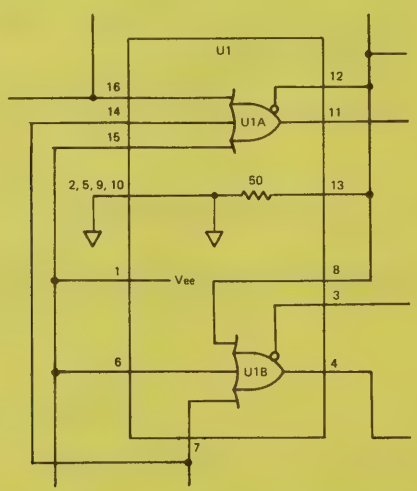
All Serials >Change A9R12 value to 620K and add asterisk (*) adjacent to A9R12.

Page 8-29, Figure 8-16. A10 VCO No. 2 Assembly:

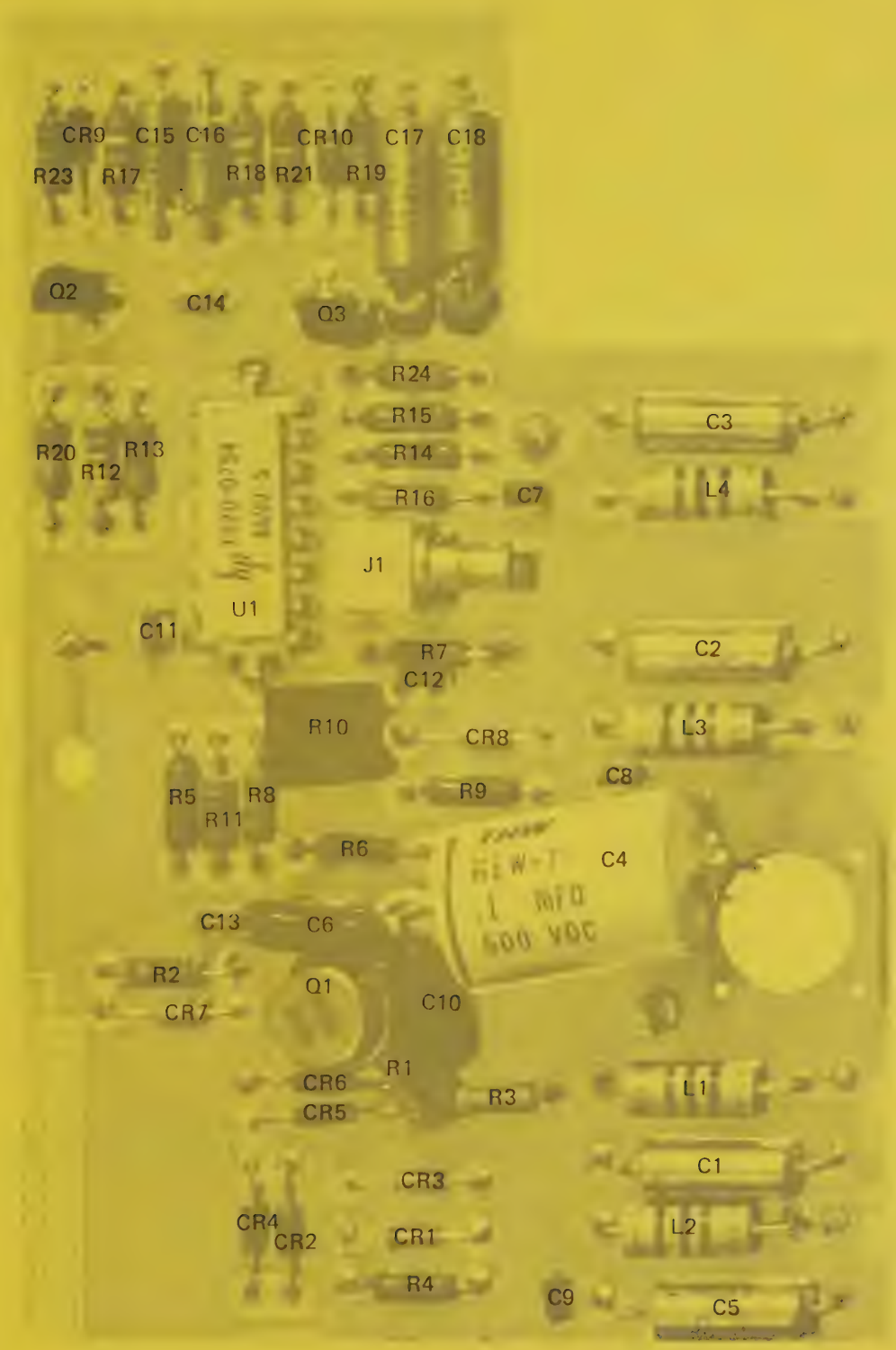
All Serials Table of Active Elements:
>Change CR4, CR5 from 05340-80005 to 0122-0065.

2108 >Change A10 (05340-60008) SERIES to 2108.
>Change R22 value to 18K.

2112 >Change A10 (05340-60008) SERIES to 2112.
>Change connections of U1A(14,15) and U1B(6,7) as shown in the following figure:



Part of A10 VCO No. 2 Assembly Schematic Diagram



Part of Figure 8-9. A3 HI-Z INPUT AMPLIFIER ASSEMBLY (05340-60089) SERIES 2104 COMPONENT LOCATOR

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 8-33, Figure 8-18. A12 VCO No. 1 Assembly:

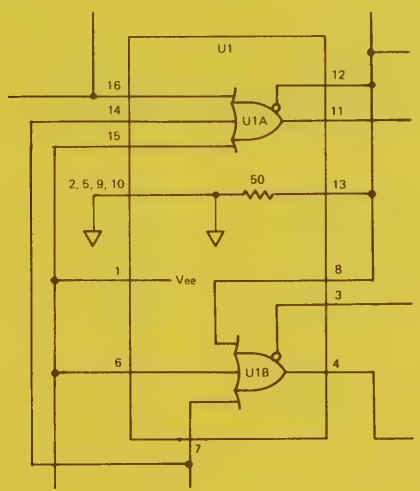
All Serials
>Change A12C10 and A12C12 values to 18 pF.
>Add an asterisk (*) to A12C10, A12C12 and A12R8.

#
Table of Active Elements:
>Change CR4, CR5 from 05340-80005 to 0122-0065.

1944
>Add C9* (22pF) in parallel with A16J6 and ground.

2108
>Change A12 (05340-60008) SERIES to 2108.
>Change R22 value to 18K.

2112
>Change A12 (05340-60008) SERIES to 2112.
>Delete C9 (22pf) in parallel with A16J6 and ground (previously added for Series 1944).
>Change connections of U1A(14,15) and U1B(6,7) as shown in the following figure:



Part of A12 VCO No. 1 Assembly Schematic Diagram.

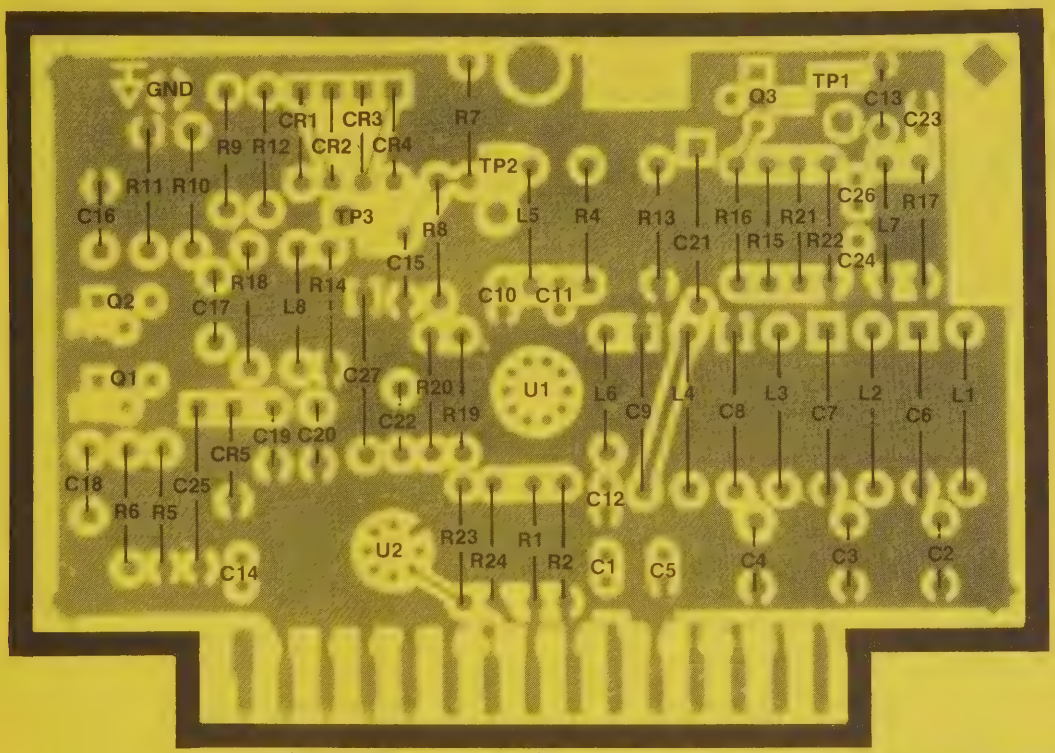
Page 8-37, Figure 8-20. A14 Limiter/Amplifier/Mixer Assembly:

2112
>Change on schematic: Open line between C14 and R5 and open line between C26 and R22. Reroute the 20KHz Reference input from A14 Pin #1 thru C26 to the base of Q1 and the output of U1 thru C14 to the base of Q3.

NOTE

Old and new boards are directly interchangeable.

SERIAL PREFIX OR SERIES NUMBER | CHANGES



A14 Limiter/Amplifier/Mixer Assembly Component Locator

Page 8-43, Figure 8-23. A17 Direct Count Amplifier Assembly:

All Serials
>Change U5A and U5B to U4A and U4B, respectively.
>Move E2 Ferrite Bead from junction between A17A1C1 and A17A1C2 to the opposite side of A17A1C1 between the junction with A17A1R23 and the positive side of the capacitor.
>Delete U5A and U5B in diagram below component locator. Connect output of U4B to the junction of U1, U2, and "Direct Count to A22".
>Add "NOTE 4. BEAD E2 NOT IN ALL INSTRUMENTS."
REFERENCE DESIGNATIONS TABLE:
>Change U1-3,5 to U1-4.
TABLE OF ACTIVE ELEMENTS:
>Change U5 to U4 1820-1179.

1724
>Change SERIES for A17A1 to 1724.
>Add 100K ohms resistor A17A1R24 between A17A1U2 pin 6 and common.
>Change resistor listing for A17A1 in Reference Designations table to "R1=24".

2040
>Delete A17W1; show that input cable W10 connects directly to J1 on circuit board A17A1.
>Delete A17W2; show that output cable W11 connects directly to J2 on circuit board A17A1.
>Change A17A1*R14 value from 820 to 825 ohms.

2532
>Replace A17A1 (05340-60038) schematic diagram/component locator with new A17A1 (05340-60096, SERIES 2532) schematic diagram/component locator supplied in these manual changes.

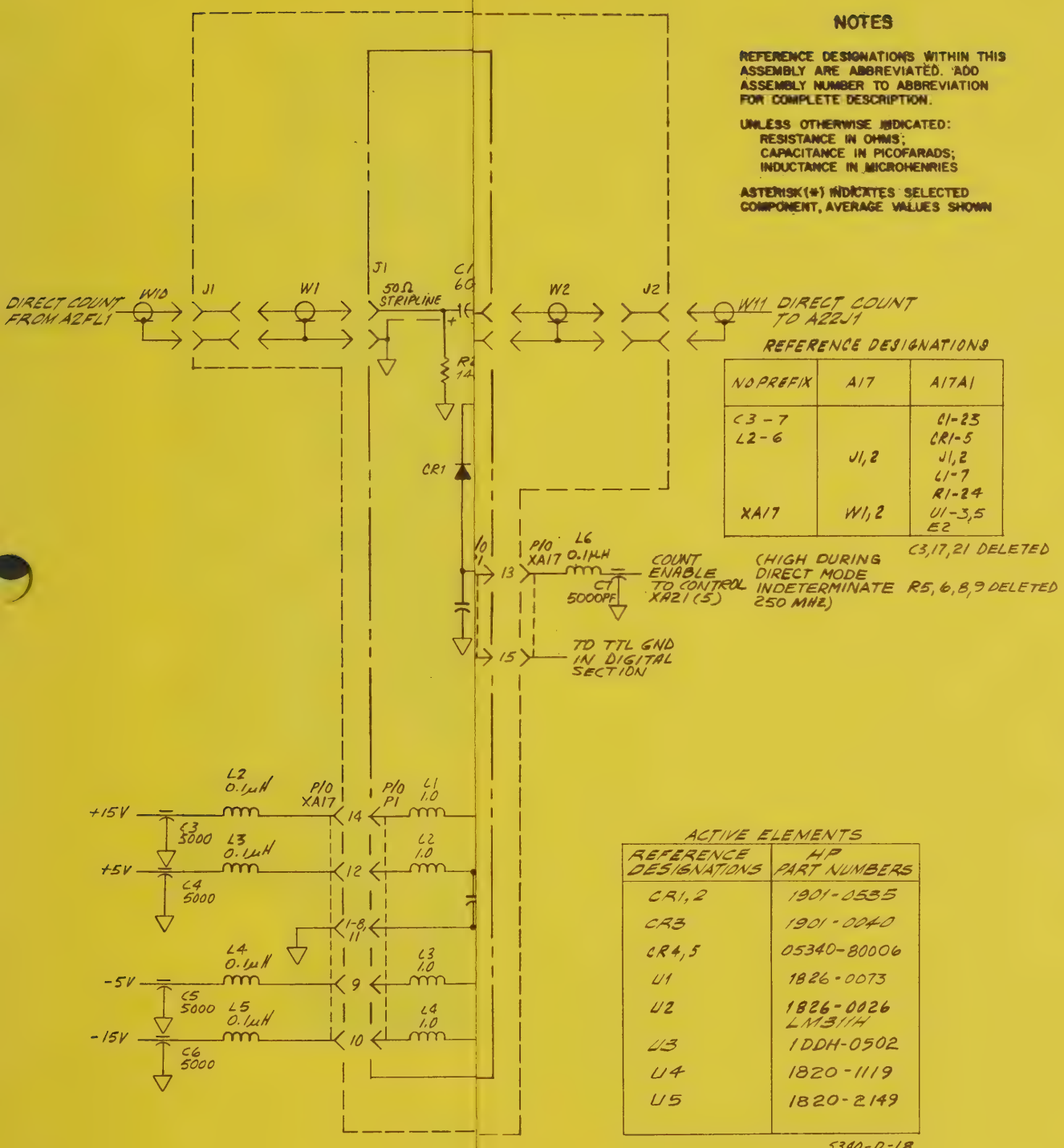
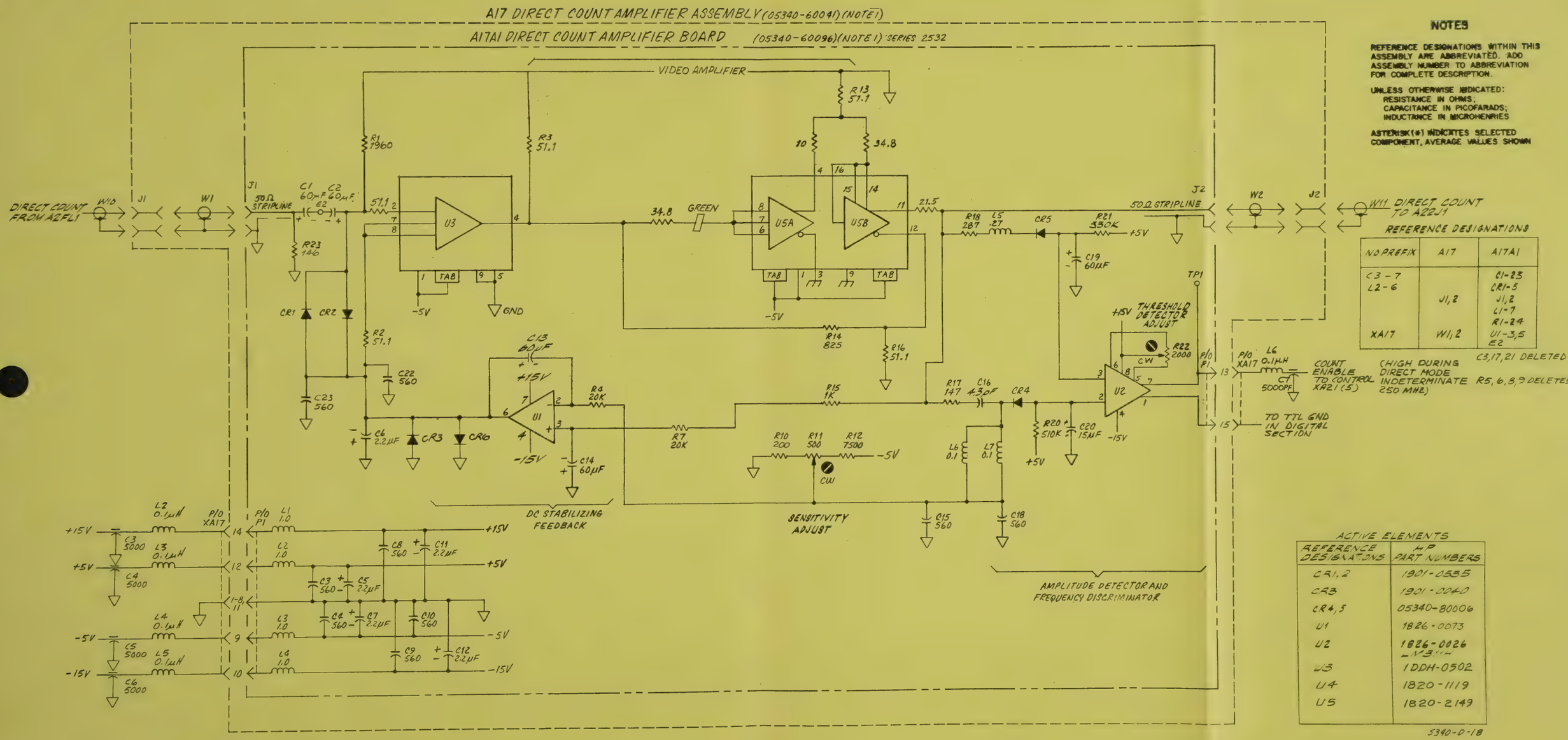


Figure 8-23
ct Count Amplifier Assembly Schematic Diagram
(05340-60096, SERIES 2532)



NOTES

REFERENCE DESIGNATIONS WITHIN THIS ASSEMBLY ARE ABBREVIATED. ADD ASSEMBLY NUMBER TO ABBREVIATION FOR COMPLETE DESCRIPTION.

UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS;
INDUCTANCE IN MICROHENRIES

ASTERISK(*) INDICATES SELECTED COMPONENT, AVERAGE VALUES SHOWN

REFERENCE DESIGNATIONS

NO PREFIX	A17	A17A1
C3-7 L2-6	J1, 2	C1-23 CR1-5 J1, 2 L1-7 R1-24
XA17	W1, 2	U1-3, 5 E2

C3, 17, 21 DELETED

P/O XA17 (HIGH DURING DIRECT MODE INDETERMINATE 250 MHz)

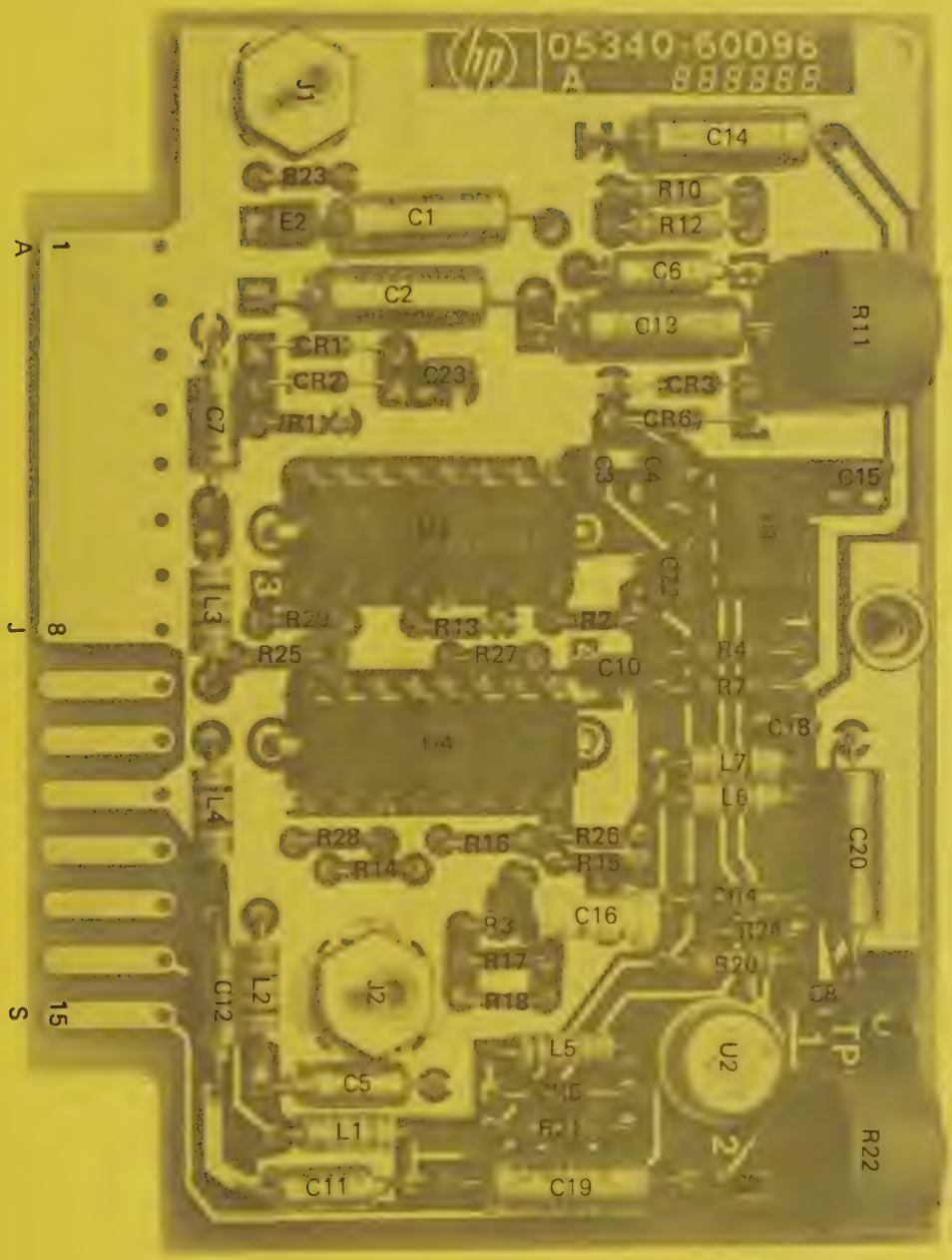
R5, 6, 8, 9 DELETED

ACTIVE ELEMENTS

REFERENCE DESIGNATIONS	HP PART NUMBERS
CR1, 2	1901-0535
CR3	1901-0040
CR4, 5	05340-80006
U1	1826-0073
U2	1826-0026
U3	1DDH-0502
U4	1820-1119
U5	1820-2149

5340-D-18

Figure 8-23
A17 Direct Count Amplifier Assembly Schematic Diagram
(05340-60096, SERIES 2532)



Part of Figure 8-23
A17 Direct Count Amplifier Assembly Component Locator
(05340-60096, SERIES 2532)

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 8-49, Figure 8-26. A19 Interface B Assy (Part of Opt 011) Schematic:

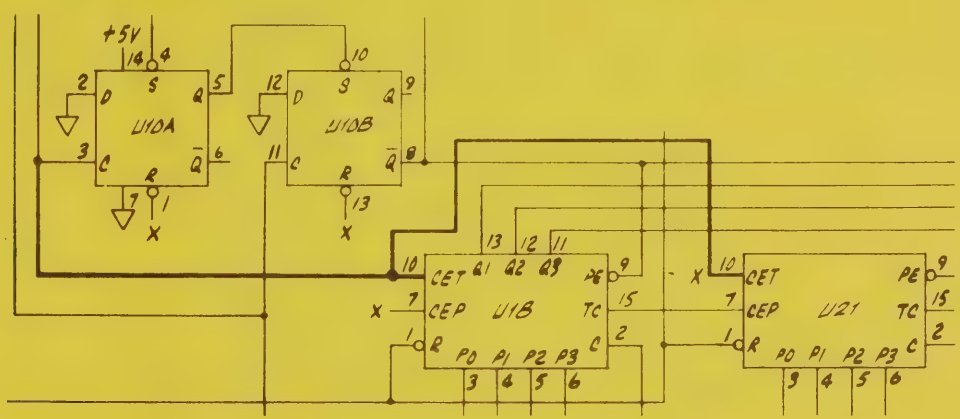
All Serials
>Change A19R4, R5 values from 270 to 261 ohms.
>Change A19R11 value from 470 to 464 ohms.

Table of Active Elements:
>Change A19U5, U6 from 1820-0710 to 1820-1470.

Page 8-53, Figure 8-27. A20 Time Base Assembly:

All Serials
Active Elements Table:
>Change A20U24 manufacturing part number from (SN5419) to DM74196.

2116
>Change A20 (05340-60073) SERIES to 2116.
>Disconnect U18(10) and U21(10) from "X" (2.7K pull-up resistor - R1) and connect them to U10A(3) as shown in the following figure:



Part of A20 Time Base Assembly Schematic Diagram

2432
>Change A20 (05340-60073) SERIES to 2432.
Table of Active Elements:
>Change U24 to 1820-1251, SN53661.

Page 8-55, Figure 8-28. A21 Control Assembly:

1644
>Change A21R7 value to 68K.

1804
>Change A21 (05340-60073) SERIES to 1804.
>Add an asterisk (*) adjacent to A21R6.

2008
>Change A21 (05340-60073) SERIES to 2008.

2044
>Change average value shown for A21R6 to 20K.

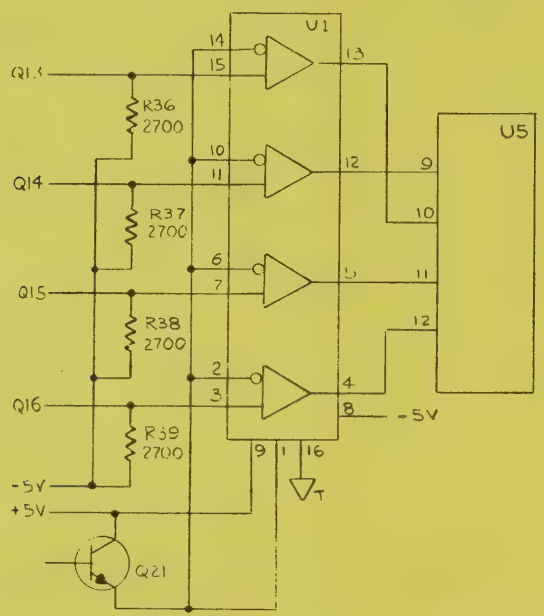
SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 8-59, Figure 8-29. A22 High Frequency Counter Assembly:

All Serials — Table of Active Elements:
>Change A22U2 from 1820-1019 to 1DC9-0001.

1928 — Instruments with Serial Numbers 1928A06376 thru 1928A06450 are supplied with Series 1328 Circuit Boards for A22. These Series 1928 circuit boards did not include the capacitor and IC changes described below.

>Change A22 (05340-60016) SERIES to 1928.
>Delete C11 and component locator from diagram.
>Change U1 in Active Elements table to 1820-1052 (MC10125L).
>Change U1 circuit as shown in the following figure:



Part of A22 (05340-60016) High Frequency Counter Assembly Schematic Diagram

2532 — >Change A22R30 value to 42.2 ohms.
>Add an asterisk to A22R30 to indicate a factory-selected value.

SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 8-65, Figure 8-32. A25 Display Assembly A26 Blanking Assembly:

All Serials

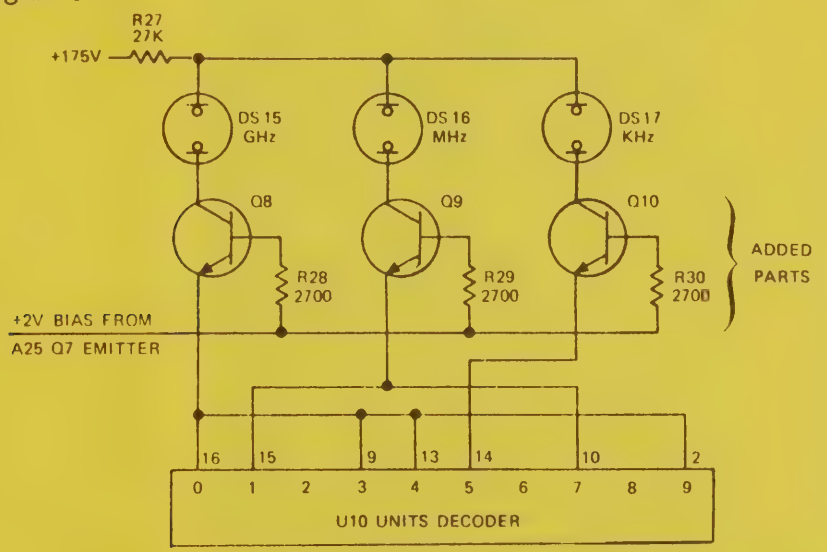
>Change A25Q1 thru Q6 and A26Q1 thru Q5 to 1854-0575 in active elements table.
>Change A26Q6 thru Q10 to 1853-0336.
>Add an "8" to the U designator for the IC located to the left of U2.
>Add a "9" to the U designator for the IC located to the right of U7.
>Add an "11" to the U designator for the IC located to the left of U10.
>Replace CR1 with R15, 68K.

1644

>Change SERIES to 1644.
>Delete A25CR1 and A25R11 from schematic diagram and table of active elements. A25CR1 is replaced with a jumper wire.

1904

>Change A25 SERIES to 1904.
>Add A25Q8,Q9,Q10 in series with A25DS15,DS16 and DS17 as shown in the following figure.
>Add A25R28/R29,R30 bias resistors as shown in the following figure.



Part of A25 Display Assembly Schematic Diagram

2008

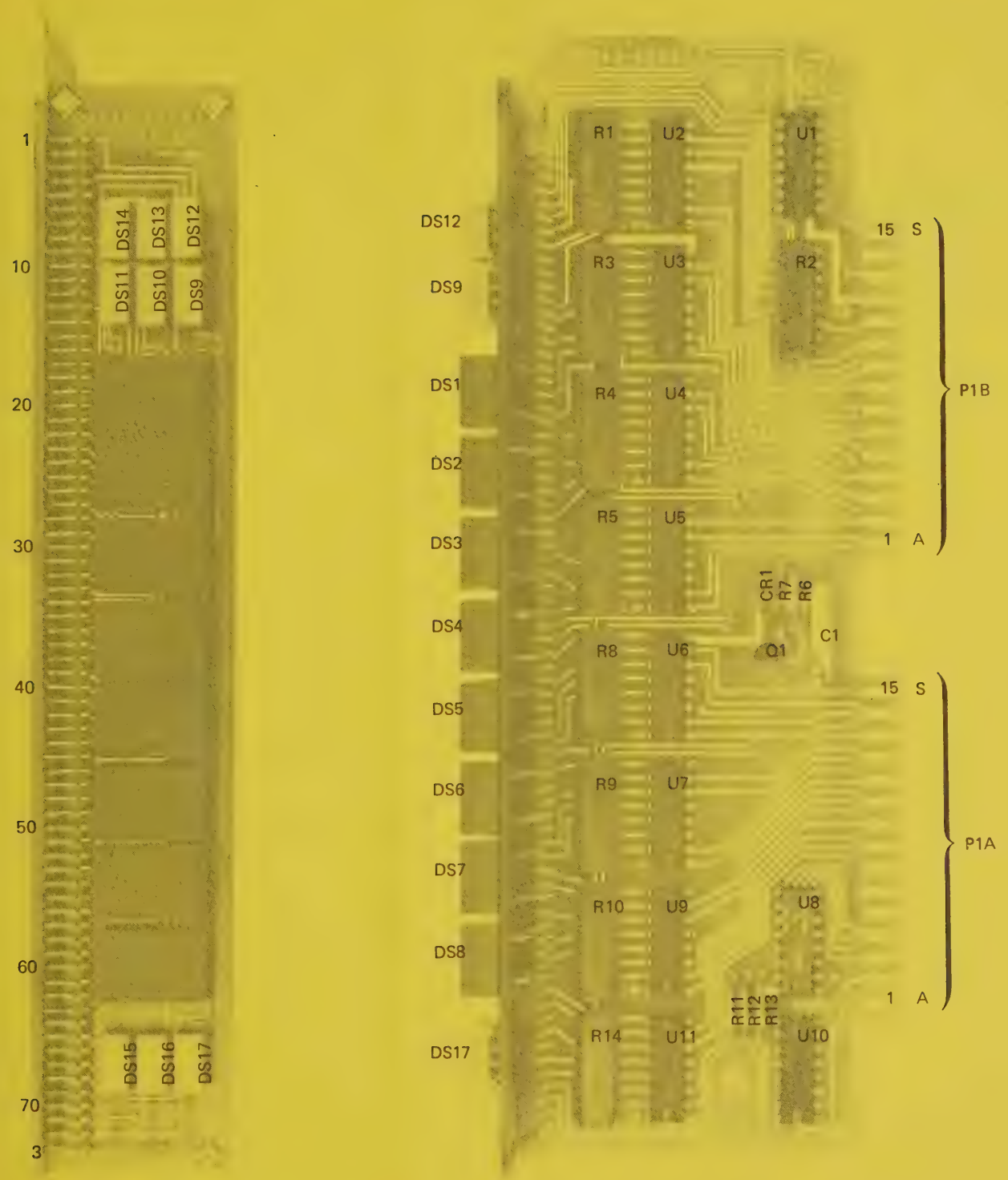
>Replace A25 schematic diagram and component locator with new schematic diagram and component locator supplied in these manual changes.

2012

>Change A25 SERIES to 2012.
>Change the value of R6 from 100K to 15K.

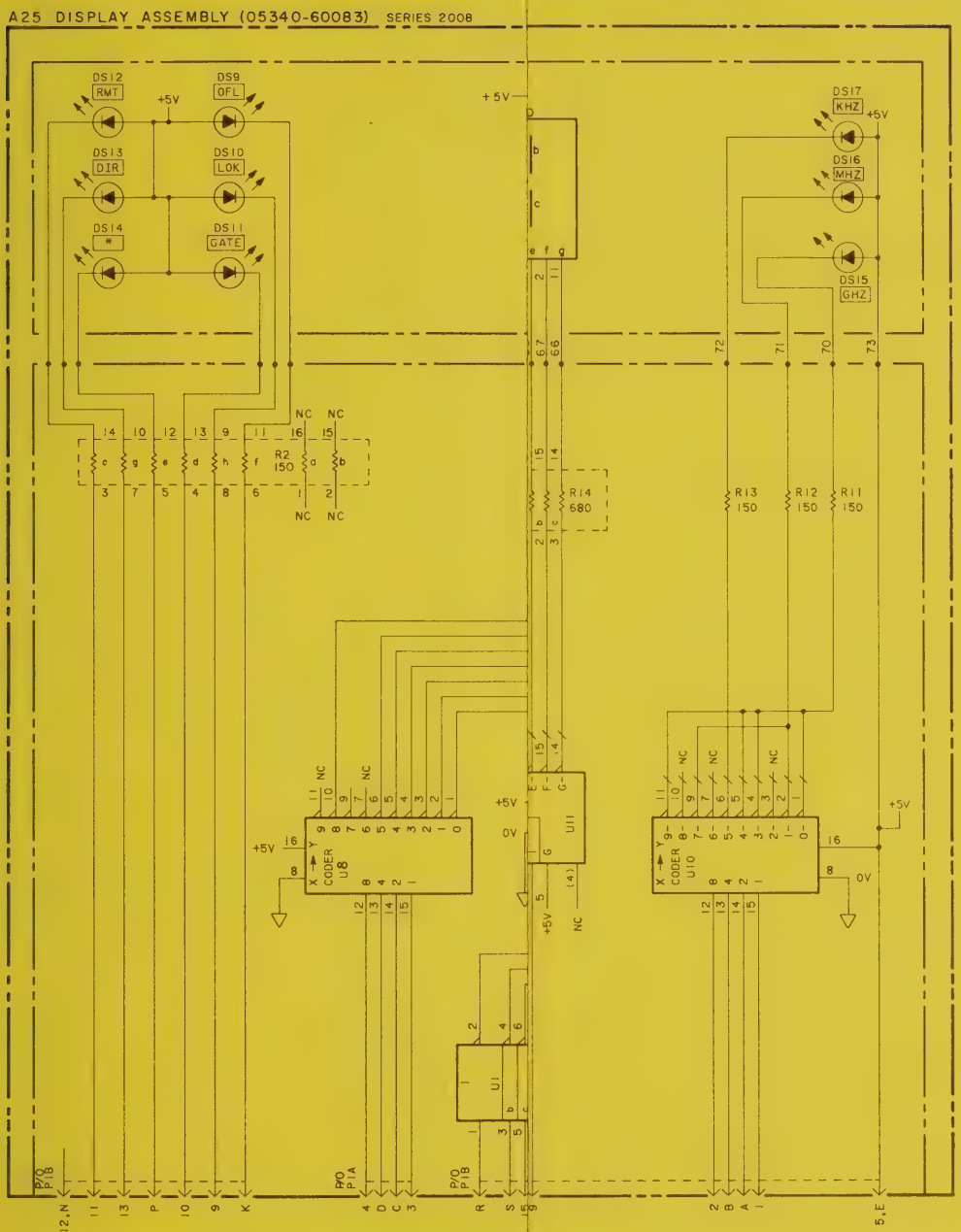
2044

>Change A25 SERIES to 2044.
>Change CR1 to R15, 68K.
>Change R6 to 100K.



Part of Figure 8-32. A25 (05340-60083) Display Assembly
SERIES 2008 Component Locator

Figure 8-32. A25 Display Assembly (05340-60083)
Schematic Diagram SERIES 2008



NOTES:

1. REFERENCE DESIGNATIONS WITHIN THIS ASSEMBLY ARE ABBREVIATED. ADD ASSEMBLY NUMBER TO ABBREVIATION FOR COMPLETE DESCRIPTION.
2. UNLESS OTHERWISE INDICATED: RESISTANCE IN OHMS; CAPACITANCE IN FARADS;
3. ASTERISK (*) INDICATES FACTORY SELECTED COMPONENT, AVERAGE VALUE SHOWN.
4. 7 SEGMENT LED

A25 (05340-60083) Series 2008 Schematic diagram

Figure 8-32. A25 Display Assembly (05340-60083)
Schematic Diagram SERIES 2008

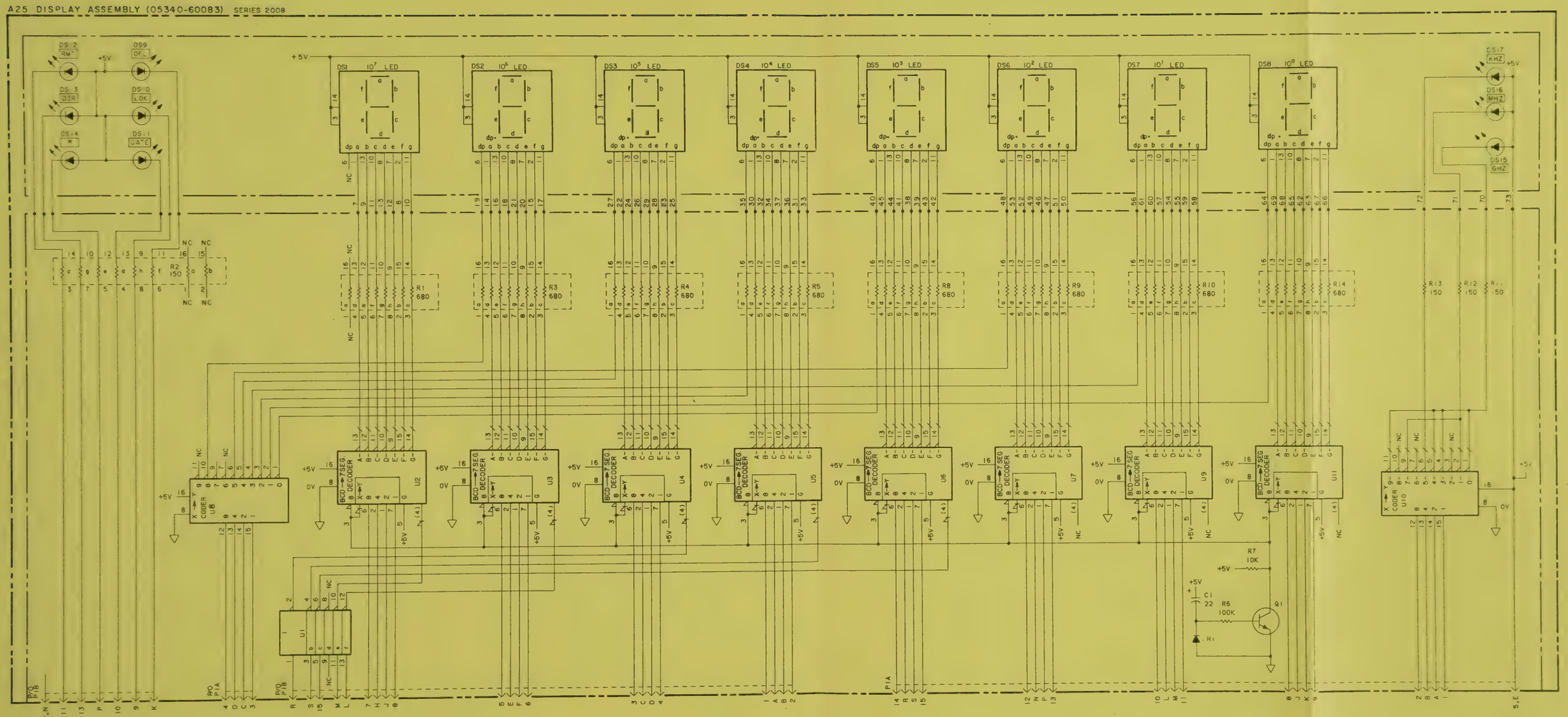


Figure 3B. A25 (05340-60083) Series 2008 Schematic diagram

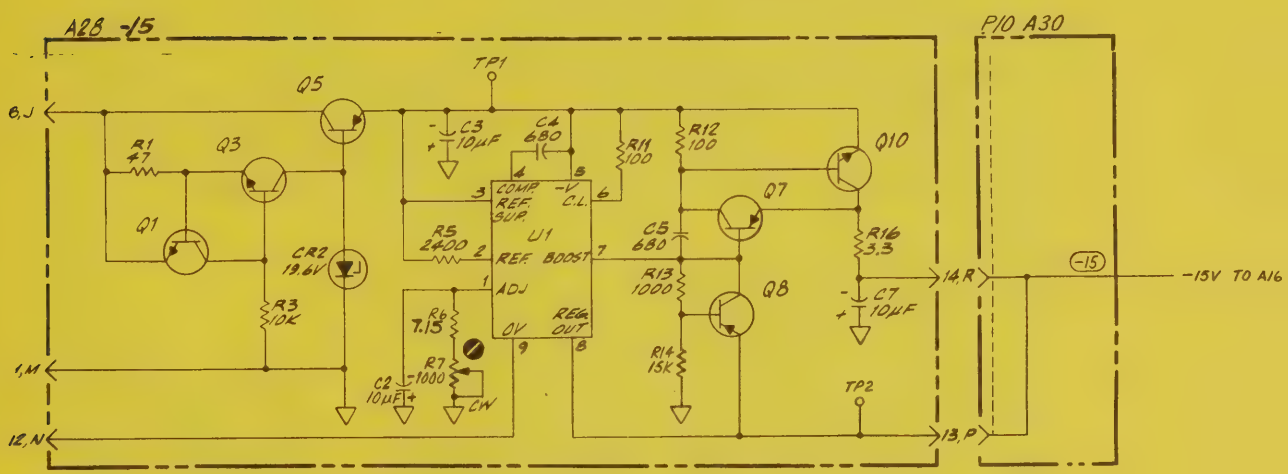
SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 8-69, Figure 8-33. A28 -15 and +175V Regulators Assembly,

All Series >Change F1 to "1.0A FOR 115V -- 500mA FOR 230V".

Table of Active Elements:
>Change A28Q9 to 1854-0575.

2008 >Change A28 from 05340-60022 to 05340-60085, Series 2008.
>Replace A28 schematic with figure below.
>Replace A28 component locator with new Fig. 8-33 attached.



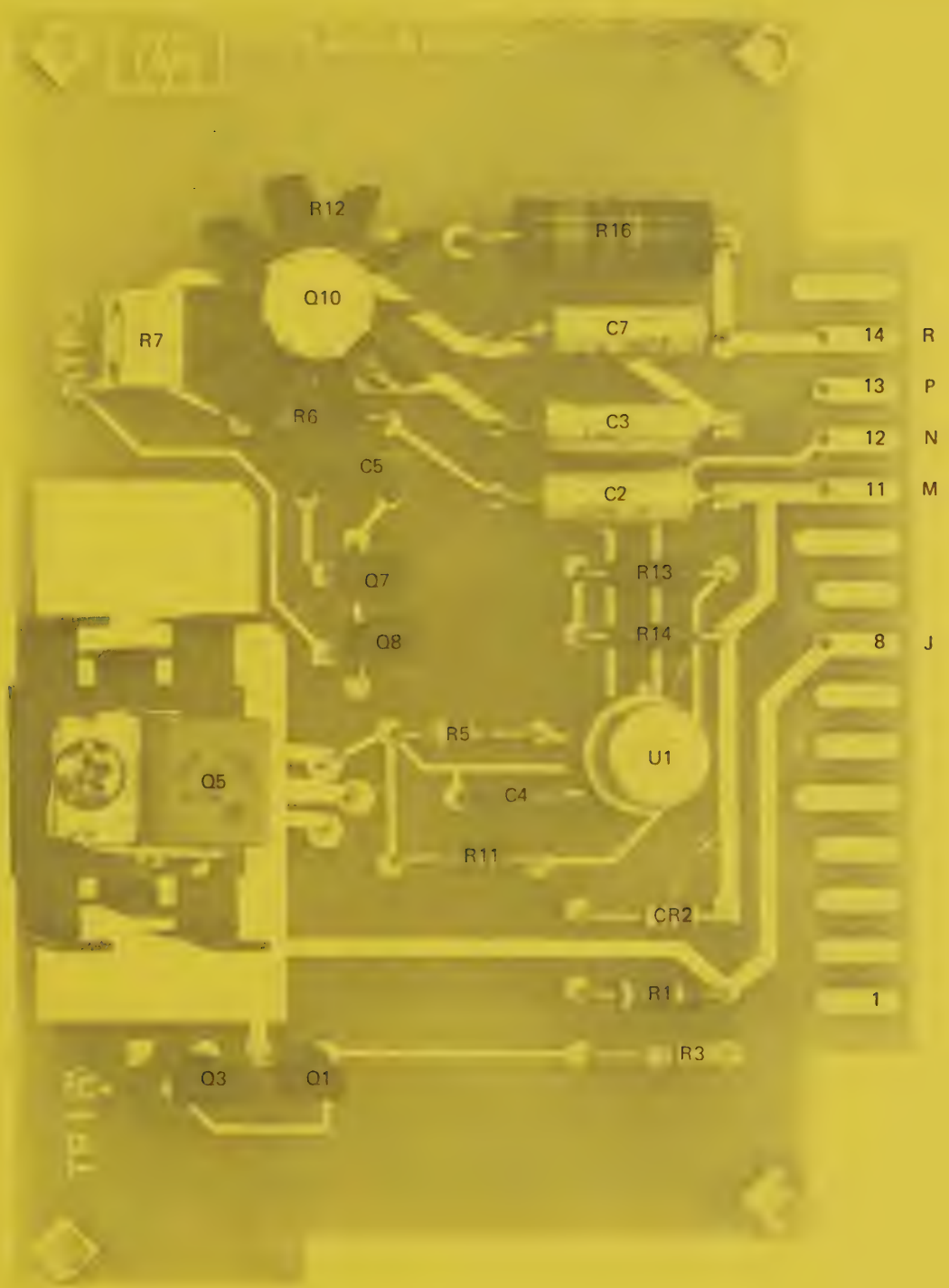
A28 (05340-60085) Schematic Diagram (Series 2008)

Page 8-69, Figure 8-33. A28/A29/A30 Assemblies:

1936 >Delete C1 under NO PREFIX column in Reference Designations table.
>Change C1A and C1B to C9 and C10, respectively, values to 4700PF.

Page 8-69, Figure 8-33. A29 +15V Regulator Assembly:

2040 >Change A29R7 value to 4.7 ohms.



Part of Figure 8-33. A28 (05340-60085) -15 and +175 Regulators SERIES 2008 Component Locator

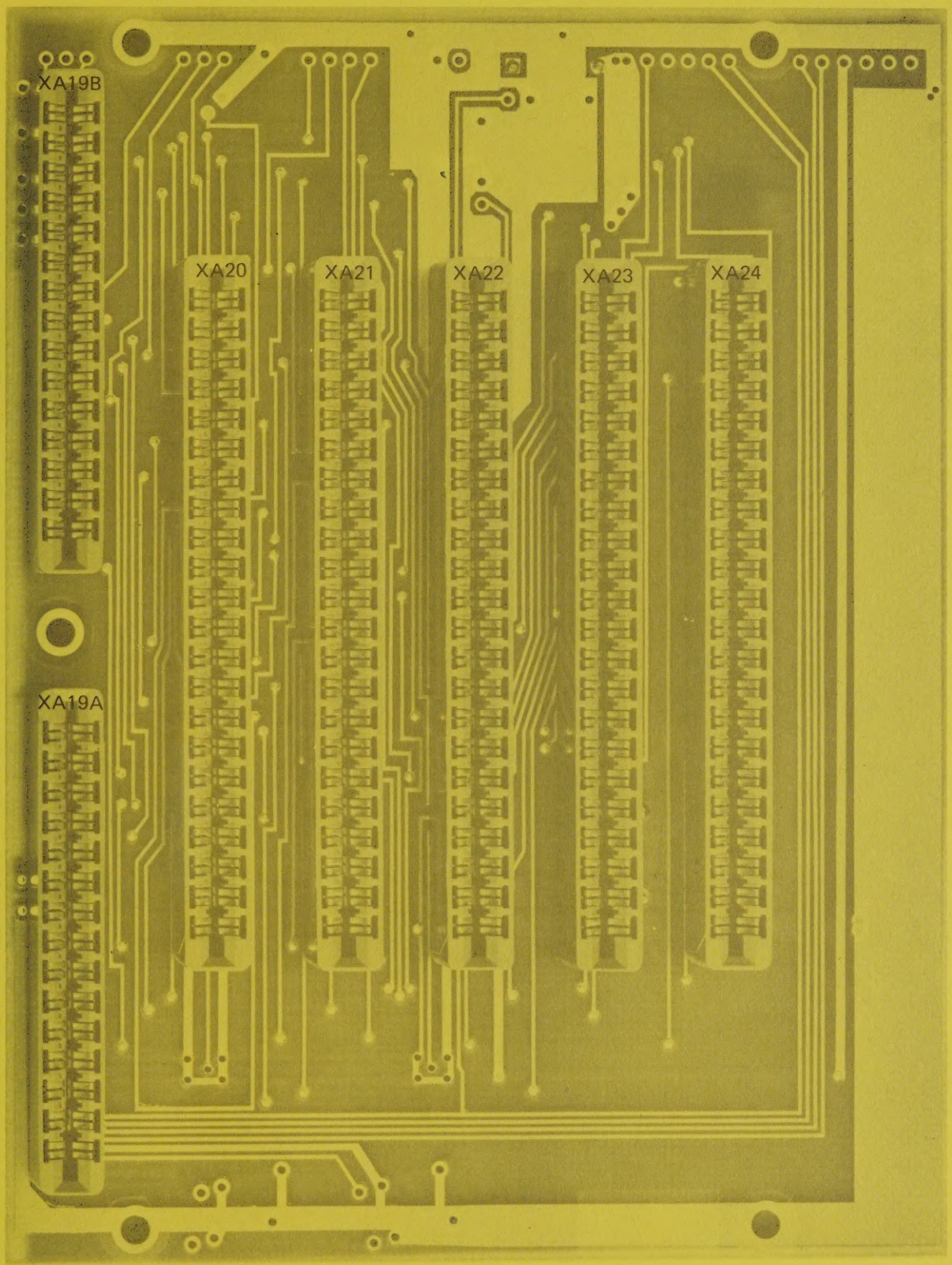
SERIAL PREFIX OR SERIES NUMBER	CHANGES

Page 8-69, Figure 8-33. A30 Power Supply Motherboard:

All Series	Table of Active Elements: >Change A30CR1,1,3 to 1901-0366.
1728	>Change A30 (05340-60029) SERIES to 1728. >Change A30C1 and C2 to 1800UF. >Change A30C3 and C4 to 2200UF.

Page 8-75, Figure 8-34. A30 Power Supply Motherboard:

1804	>Add SERIES 1804 at top of A30 diagram.
1816	>Change A30 (05340-60029) SERIES to 1816.
2008	>Change A30 (05340-60029) SERIES to 2008.
2104	>Add A36 Digital Motherboard Assembly. >Add A36 Top & Bottom Views, attached.



Part of Figure 8-34. A36 Digital Motherboard Assembly
Component Locator (Top View)
(05340-60086) SERIES 2104